

personal interview with the Examiner before the next action on the merits. Accordingly, should the Examiner reach this case for action before a personal interview, he is requested to contact the undersigned.

Turning to the merits of the Final Office Action, Claims 1 to 26 and 30 were rejected under 35 U.S.C. 102(e) over U.S. Patent 6,542,634 (Ohga). The rejection is again respectfully traversed, for the reason that Ohga is not seen to apply multiple inverse transforms to a source color value to obtain plural target color values in which each transform corresponds to a different viewing condition; and as a consequence Ohga could not possibly calculate a single color value in device dependent color space that fits the plural target color values with acceptable error.

Ohga is seen to describe a conventional technique for color conversion, such as that illustrated in Figure 14 of the subject application. As part of the conversion, Ohga applies a single inverse transform to each single color in a perceptual color space, so as to transform the color from perceptual color space to target color space. It is true that the inverse transform is selected based on target viewing conditions, and for this reason Ohga stores multiple inverse transforms. However, it is equally true that Ohga selects only a single one of those inverse transforms, such that for each single color in a perceptual color space, only a single color value is obtained in the target color space.

As a consequence, since Ohga selects only a single inverse transform for each color, Ohga does not apply multiple inverse transforms to a color value so as to obtain plural target color values for that color, with each transform corresponding to a different viewing condition respectively. It naturally follows, therefore, that Ohga does not calculate a single color value in device dependent color space that fits the plural target color values with acceptable error.

Ohga is therefore unlike the invention, since in the invention, multiple inverse transforms are applied to a single color value so as to result in plural different target color values in respective ones of multiple different viewing conditions. The plural different color target values are thereafter used so as to calculate a single color value in device dependent color space that fits the plural target color values with acceptable error.

In maintaining the rejection over Ohga, the Office Action maintained its reliance on the following sections of Ohga as support to its contention that Ohga applies multiple inverse transforms to a color value so as to obtain plural target color values: column 8, lines 31 to 67; column 9, lines 1 to 4; and column 16, lines 34 to 63. An additional reference was added to Ohga's Figures 1 to 3. Applicant maintains his position that these sections of Ohga contain no such disclosure, and rather very clearly describe a situation in which, for a single color value that is input, only a single color value will be output. This is categorically clear from two of the paragraphs that the Office Action relies on, found in Ohga's column 16:

"RGB input color signals are converted by the conversion LUT 21 from the input-device-dependent color signals to XYZ signals which are device-independent signals under the viewing condition 1. Next, the XYZ signals are converted by color appearance model forward converters 134 and 135 to perception signals JCH or QMH, based on the viewing condition 1, such as the white point of D50 illuminant, an illuminance level, and the state of ambient light. In a case of relative color matching, JCH space is selected, while in a case of absolute color matching, QMH space is selected."

"The color perception signals JCH and QMH are mapped to a color reproduction range of the monitor device by the LUT 132 and 133. The color perception signals JCH and QMH, where the gamut mapping has been performed, are converted by color appearance model inverse converters 136 and 137 to XYZ signals which are device-independent signals under the viewing condition 4, based on the viewing condition 4, such as the white point of D93 illuminant, a luminance level, and the state of ambient light. Then, XYZ signals are converted to monitor-device-dependent color signals under the viewing condition 4 by the conversion LUT 26." (Lines 42 to 63 of Ohga's column 16)

An overview of Ohga's process is illustrated in his Figure 2. As seen there LUT 11 converts input data from a device-dependent coordinate system to a device-independent coordinate system. LUT 11 is generated as shown in Figure 4 based on an input profile and viewing condition 1. LUT 11 corresponds to converter 400 in Figure 4 of the subject application, but it is completely different from the inverse transform (such as that shown at 404) of the subject invention. In Ohga's Figure 4, he describes at step S54 that XYZ tristimulus values of an illuminant reference are converted into XYZ values of ambient light reference by using a color appearance model (CAM). Although this process of transformation includes an inverse transform, it is only a process for generating Ohga's LUT 11. Accordingly, Ohga does not describe that multiple different inverse transforms based on viewing condition 1 and/or viewing condition 2 are applied to "the color value".

With respect to calculation of "a single color value", page 3 of the Office Action mentions a "scaling operation" and "Von Kries conversion". These references apparently concern the disclosures beginning at Ohga's line 49 of column 1, in which he describes generally-known techniques for predicting changes in the XYZ tristimulus values of a color when the color is viewed under different illuminants. The pertinence of these references is simply not understood. At best, these references simply highlight the problems addressed by the present invention, since one reason for the change in XYZ tristimulus values under different illuminants is a metamerism shift.

Taken as a whole, therefore, the process of Ohga is fundamentally different from that of the invention. Ohga matches a color appearance of an input image under viewing condition 1 to the color appearance of a corresponding output image under a different viewing condition 2. But since Ohga's output image is designed for viewing in condition 2, if the output image were viewed under a third viewing condition, it would

exhibit a metamerism shift that the present invention is designed to reduce. In simple and somewhat overly-broad terms, the present invention seeks to provide an output image with high color fidelity even if the output image is viewed under different viewing conditions, and not merely under the single viewing condition 2 of Ohga.

Therefore it is respectfully submitted that the claims define subject matter that is not anticipated by Ohga, and allowance of the claims is respectfully requested.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael K. O'Neill", written over a horizontal line.

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